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Appendix 8.1 – Legislation, Policy and Guidance

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Document approval

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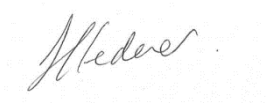
Prepared by:	Hannah Lederer		Environmental Scientist	16/02/2021
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Document revision record

Revision no	Date	Details of revisions	Prepared by	Checked by
0	17/02/2021	Draft for Client review	HKL	RSF

Contents

1 Introduction

This Appendix has been produced to support Chapter 8 – Air Quality, Odour and Human Health, of the Environmental Impact Assessment Report (EIAR) to support the planning application for an Energy Recovery Park (ERP) (the Proposed Development) at Killoch, East Ayrshire.

This Appendix provides a detailed review of the legislation, policy and guidance surrounding air quality, odour and human health which is relevant to the Proposed Development.

2 Legislative Framework and Policy

2.1 Air quality assessment levels

European air quality legislation is consolidated under the Ambient Air Quality Directive (Directive 2008/50/EC), which came into force on 11 June 2008. This Directive consolidates previous legislation which was designed to deal with specific pollutants in a consistent manner and provides Ambient Air Directive (AAD) Limit Values for sulphur dioxide, nitrogen dioxide, benzene, carbon monoxide, lead and particulate matter with a diameter of less than 10µm (PM_{10}) and a new AAD Target Value and Limit Value for fine particulates (those with a diameter of less than 2.5µm ($PM_{2.5}$). The fourth daughter Directive - 2004/107/EC - was not included within the consolidation. It sets health-based Target Values for polycyclic aromatic hydrocarbons (PAHs), cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable. Directives 2008/50/EC and 2004/107/EC are transposed under Scottish Law into the Air Quality Standards (Scotland) Regulations (2010).

The UK Government and the devolved administrations are required under the Environment Act (1995) to produce a national air quality strategy. This was last reviewed and published in 2007. The Air Quality Strategy (AQS) sets out the UK's air quality objectives and recognises that action at national, regional and local level may be needed, depending on the scale and nature of the air quality problem. This includes additional targets and limits for 15-minute sulphur dioxide and 1,3-butadiene and more stringent requirements for benzene and PAHs, known as AQS Objectives.

In 2015 the Scottish Government produced "Cleaner Air for Scotland – the Road to a Healthier Future" (CFAS Strategy). This sets out how the Scottish Government proposed to reduce air pollution further to protect human health and fulfil Scotland's legal responsibilities. This included a commitment to include in legislation World Health Organisation (WHO) guideline values as Scottish objectives for PM_{10} and $PM_{2.5}$. This was achieved with the introduction of an annual mean objective of 10µg/m^3 for $PM_{2.5}$, noting that the annual mean objective for PM_{10} in Scotland was already more stringent that the WHO guideline value.

For other pollutants SEPA set Environmental Assessment Levels (EALs) in the IPPC H1 (2003) document. On other projects SEPA has requested that those EALs set out in the Environment Agency's environmental management guidance 'Air Emissions Risk Assessment for your Environmental Permit'[1] ("Air Emissions Guidance") are also considered. The long-term and short-term EALs from these documents have been used when the AQS or Air Quality Standards (Scotland) Regulations does not contain relevant objectives. Standards and objectives for the protection of sensitive ecosystems and habitats are also contained within IPPC H1, the Air Emissions Guidance and the Air Pollution Information System (APIS).

In October 2020 the Scottish Government published a consultation on a draft new air quality strategy "Cleaner Air for Scotland 2". Although at consultation stage a key point relevant to this project is the intention to ensure that EU standards and principles to emissions of air pollutants continues to apply in Scotland following the UK's exit from the EU – i.e. the Industrial Emissions Directive and Waste Incineration BREF.

The AQALs relevant to the Proposed Development are summarised in the following tables.

[1] https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit#environmental-standards-for-air-emissions

Table 1: Air Quality Assessment Levels

Pollutant	AQAL (µg/m^3)	Averaging Period	Frequency of Exceedance	Source
Nitrogen dioxide	200	1 hour	18 times per year (99.79th percentile)	AAD Limit Value
	40	Annual	-	AAD Limit Value
Sulphur dioxide	266	15 minutes	35 times per year (99.9th percentile)	AQS Objective
	350	1 hour	24 times per year (99.73rd percentile)	AAD Limit Value
	125	24 hours	3 times per year (99.18th percentile)	AAD Limit Value
Particulate matter (PM_{10})	50	24 hours	7 times per year (98.1st percentile)	AQS Objective (Scotland)
	18	Annual	-	AQS Objective (Scotland)
Particulate matter ($PM_{2.5}$)	10	Annual	-	AQS Objective (Scotland)
Carbon monoxide	10,000	8 hours, running	-	AAD Limit Value
Hydrogen chloride	750	1 hour	-	EA (2020)
	20	Annual	-	IPPC H1 (2003)
Hydrogen fluoride	160	1 hour	-	EA (2020)
	16	Annual	-	EA (2020)
Ammonia	2,500	1 hour	-	IPPC H1 (2003)
	180	Annual	-	IPPC H1 (2003)
Benzene	195	1-hour	-	EA (2020)
	3.25	Annual	-	AQS Objective (Scotland)
1,3-butadiene	2.25	Annual, running	-	AQS Objective
PCBs	6	1-hour	-	IPPC H1 (2003)
	0.2	Annual	-	IPPC H1 (2003)
PAHs – benzo(a)pyrene	0.00025	Annual	-	AQS Objective

Table 2: Air quality Assessment Levels for Metals

Pollutant	AQAL (ng/m^3)	Averaging Period	Source
Cadmium	1,500	1-hour	IPPC H1 (2003)
	5	Annual	AAD Target Value
Thallium	30,000	1-hour	IPPC H1 (2003)
	1,000	Annual	IPPC H1 (2003)
Mercury	7,500	1-hour	IPPC H1 (2003)
	250	Annual	IPPC H1 (2003)
Antimony	150,000	1-hour	IPPC H1 (2003)
	5,000	Annual	IPPC H1 (2003)
Arsenic	1,500	1-hour	IPPC H1 (2003)
	3	Annual	EA (2016)
Cadmium	1,500	1-hour	IPPC H1 (2003)
	5	Annual	IPPC H1 (2003)
Chromium (II & III)	150,000	1-hour	IPPC H1 (2003)
	5,000	Annual	IPPC H1 (2003)
Chromium (VI)	3,000	1-hour	IPPC H1 (2003)
	0.2	Annual	EA (2020)
Cobalt	6,000	1-hour	IPPC H1 (2003)
	200	Annual	IPPC H1 (2003)
Copper	200,000	1-hour	IPPC H1 (2003)
	10,000	Annual	IPPC H1 (2003)
Lead	500	1-hour	IPPC H1 (2003)
	250	Annual	AQS Objective (Scotland)
Manganese	1,500,000	1-hour	IPPC H1 (2003)
	150	Annual	EA (2020)
Nickel	30,000	1-hour	IPPC H1 (2003)
	20	Annual	AAD Target Value
Vanadium	1,000	1-hour	IPPC H1 (2003)
	5,000	Annual	IPPC H1 (2003)

Critical Levels for the protection of sensitive ecosystems and habitats are also outlined within the Air Quality Standards (Scotland) Regulations for oxides of nitrogen and sulphur dioxide. Limits for ammonia are contained in IPPC H1 (2003). However, these have been superseded by more recent Critical Levels as detailed within the Air Pollution Information System (APIS). The Critical Levels relevant to this planning application are presented in the following table.

Table 3: Critical Levels for the Protection of Ecosystems

Pollutant	Concentration (µg/m3)	Measured as	Source
Nitrogen oxides (as nitrogen dioxide)	75	Daily mean	APIS
	30	Annual mean	AAD
Sulphur dioxide	10	Annual mean for sensitive lichen communities and bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity	APIS
	20	Annual mean for all higher plants	AAD
Hydrogen fluoride	<5	Daily mean	APIS
	<0.5	Weekly mean	APIS
Ammonia	1	Annual mean for sensitive lichen communities and bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity	APIS
	3	Annual mean for all higher plants	APIS

In addition to the Critical Levels set out in the table above, provides habitat specific Critical Loads for nitrogen and acid deposition. Full details of the habitat specific Critical Loads can be found in Appendix 8.4 - Emissions Modelling.

2.2 Industrial pollution regulation

Atmospheric emissions from industrial processes are controlled in the Scotland through the Pollution Prevention and Control (Scotland) Regulations (2012). The Proposed Development would require a Pollution Prevention and Control (PPC) Permit to operate. The PPC Permit would include conditions to ensure that the environmental impact of the operations is minimised. This would include conditions to prevent fugitive emissions of dust and odour beyond the boundary of the permitted activity, and limits on emissions to air.

The Industrial Emissions Directive (IED) (Directive 2010/75/EU), was adopted on 07 January 2013, and is the key European Directive which covers almost all regulation of industrial processes in the European Union (EU). Within the IED, the requirements of the relevant sector BREF (Best Available Techniques Reference documents) become binding as BAT (Best Available Techniques) guidance, as follows.

- Article 15, paragraph 2, of the IED requires that Emission Limit Values (ELVs) are based on best available techniques, referred to as BAT.
- Article 13 of the IED, requires that 'the Commission' develops BAT guidance documents (referred to as BREFs).
- Article 21, paragraph 3, of the IED, requires that when updated BAT conclusions are published, the Competent Authority (in Scotland this is SEPA)has up to four years to revise permits for facilities covered by that activity to comply with the requirements of the sector specific BREF.

SEPA explain that 'BAT' means the available techniques which are the best for preventing or minimising emissions and impacts on the environment where 'techniques' include both the technology used and the way the installation is designed, built, maintained, operated and decommissioned.

The Waste Incineration BREF was published by the European Integrated Pollution Prevention and Control (IPPC) Bureau in December 2019. The Waste Incineration BREF has introduced BAT-AELs (BAT Associated Emission Levels) which are more stringent than those currently set out in the IED for some pollutants. The Proposed Development would be designed to meet the requirements of the Waste Incineration BREF for a new plant. Therefore, it has been assumed that as a minimum standard the emissions from the Proposed Development would comply with the BAT-AELs set out in the Waste Incineration BREF for a new plant. For this assessment the anticipated emission limits, which are a combination of BAT-AELs, emission limits from the IED, are referred to as ELVs.

2.3 Local air quality management

Under Section 82 of the Environment Act (1995) (Part IV), local authorities are required to periodically review and assess air quality within their area of jurisdiction, under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves assessing present and likely future ambient pollutant concentrations against AQALs. If it is predicted that levels at the façade of buildings where members of the public are regularly present (normally residential properties) are likely to be exceeded, then the local authority is required to declare an AQMA. For each AQMA, the local authority is required to produce an AQAP, the objective of which is to reduce pollutant levels in pursuit of the relevant AQALs.

2.4 Control of dust and emissions during construction and demolition

The main requirements with respect to dust control from industrial or trade premises not regulated under the Pollution Prevention and Control (Scotland) Regulations, including the Proposed Development construction site, are those provided in Section 80 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

"any dust, steam, smell or other effluvia arising on industrial trade or business premises and being prejudicial to health or a nuisance."

Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the local authority is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Act requiring abatement and any necessary works to achieve it.

2.5 Regulation of dioxins in foods stuff

The impact of dioxins furans and dioxin-like PCBS (referred collectively as dioxins) is typically assessed against the recommended value from the Committee on the Toxicity of Chemicals in Food, Consumer Products and the Environment based on the intake from dietary sources and inhalation. However, due concern over the impact of dioxins on local milk production additional consideration has been made to the maximum levels of dioxins in foodstuffs as set out within European Commission Regulation No 1259/2011.

3 Planning Policy

3.1 National Planning Policy Framework for Scotland

Scottish Planning Policy (SPP) is Government policy on how nationally important land use planning matters should be addressed across the country. Whilst Scotland's Third National Planning Framework (NPF3) sets out the long-term vision for development an investment across Scotland. When applied together these will help the planning system to deliver the Scottish Government's vision.

The NPF3 sets out that the Scottish Government is committed regulating environmental pollution and reducing the impacts of environmental pollution on habitats and species.

3.2 Planning Advice Note PAN 64 – Waste Management Planning

This explains that "planning authorities, in consultation with SEPA, the Transport Authority and Environmental Health, will need to consider amenity factors such as provision for storage of waste. Odour and air quality issues, noise from engines, boilers and handling equipment, and the traffic involved in transporting waste / byproducts to and from the site.

3.3 Local Planning Policy

The East Ayrshire Local Development Plan 2017 was adopted in April 2017 and the East Ayrshire Minerals Local Development Plan 2020 adopted in January 2020. A new Local Development Plan 2 (LDP2) is currently in preparation with the hope to be adopted at the end of 2021.

The Air Quality Directive form a policy framework relating to air quality which provides the basic principles and objectives of how air quality should be assessed and managed. The LDP2 has a role in contributing to these objectives and will do so by integrating and promoting sustainable transport networks within the context of land-use planning in order to reduce emissions. The LDP2 will not support development which will exacerbate emissions and contribute to poor air quality. The policies which will be developed will be directly informed by this policy framework and other PPSs such as Climate Change (Scotland) Act 2009; National Transport Strategy (2016); Cleaner Air for Scotland: The Road to a Healthier Future (2019); Local Transport Strategy and the Green Infrastructure Strategy etc.

The main issues report published for consultation for the new LDP2 does not list any specific main aims regarding air quality. However reference is made to the safeguarding of a '*high quality green network ad active travel network'* and aims to '*protect and enhance our diverse natural environment and habitats'*. Later in the report, it refers to Scottish Planning Policy including the principle *'avoiding over-development, protecting the amenity of new and existing development and considering the implications of development on water supplies and air and soil quality'*.

The Interim Environmental Report as part of the preparation process for the development of LDP2 states that a key environmental issue facing East Ayrshire in relation to air quality is '*pollution and reduced air quality from road traffic, rural sources and minerals extraction.' 'To prevent deterioration and where possible enhance air quality'* is one of the strategic environmental assessment (SEA) objectives. It also states that the new LDP2 will *'protect and/or enhance the existing air quality of East Ayrshire and promote sustainable modes of transportation as well as active travel'.*

3.4 Summary

The rural setting of the Proposed Development has been taken into account in the design to ensure a minimal effect on airborne levels of substances and ensure that there are no significant impacts on designated habitats and species, in line with the NPF3. This EIA provides the information required to enable SEPA and East Ayrshire Council to fulfil their responsibility's in respect of air pollution.

Provided unacceptable impacts on air quality are avoided, and criteria relating to other aspects of the Proposed Development are met, local and national policy is supportive of the development of residual waste treatment facilities.

4 Methodology Guidance

Key guidance documents used in the production of the EIAR and supporting technical appendices are:

- Guidance on the assessment of dust from demolition and construction, IAQM 2014;
- Land-use planning & development control: planning for air quality, IAQM 2017;
- Guidance on the assessment of odour for planning, IAQM 2018;.
- A guide to the assessment of air quality impacts on designated nature conservation sites, IAQM 2020;
- Local Air Quality Management (LAQM). Technical Guidance Note (TG16);
- IPPC Environmental Assessment and Appraisal of BAT, SEPA 2003;
- Air emissions risk assessment for your environmental permit, Environment Agency 2020;
- The Design Manual for Roads and Bridges (DMRB) LAQ 105 air quality document 2019;
- Human Health Toxicological Assessment of Contaminants in Soil, ref SC050021, Environment Agency 2009; and
- Toxicology reports series - Contaminants in soil: updated collation of toxicology data and intake values for humans, Environment Agency.

These documents are further detailed where relevant within the methodology section the EIAR Chapter 8 and associated technical appendices.

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